

**Amendment and Response**

Applicant: Lizhang Yang

Serial No.: 10/687,329

Filed: October 16, 2003

Docket No.: M120.243.101

Title: OPTICAL INTERCONNECT DEVICE

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**REMARKS**

The following remarks are made in response to the Office Action mailed Feb. 7, 2006, in which claims 1-4 and 6-15 were rejected. With this Response, claim 1, 2 and 8 have been amended. Claims 1-4 and 6-15 remain pending in the application and are presented for reconsideration and allowance.

**Claim Objections**

Claim 1 has been objected to as being confusing. Specifically, in lines 6-7 of claim 1, the Office Action finds the phrase “a ribbonized assembly encasing a portion of the first ends...of the optical fibers” to be confusing. The Office Action questions whether the optical fibers have first ends, and states that “the first ends of the optical fibers” lack an antecedent basis.

With this Response, claim 1 has been amended to provide proper antecedent basis for “first ends of the optical fibers.” Accordingly, withdrawal of the objection to claim 1 is respectfully requested.

**Claim Rejections under 35 U.S.C. § 102**

Claims 1-4 and 7-15 stand rejected under 35 U.S.C. §102(a) as being anticipated by Suematsu et al. (U.S. Patent No. 6,623,175).

With regard to independent claim 1, Suematsu et al. is alleged to show, in Figure 2, an optical interconnect device comprising: a plurality of fiber optic cables (10), each cable having two ends and comprising at least one optical fiber (12) surrounded by a protective jacket (11) where the diameter of each fiber optic cable is larger than the diameter of its optical fiber and where the protective jacket of at least a first end of the fiber optic cable have been removed thereby exposing the optical fibers; a ribbonized assembly (2) encasing a portion of the first ends of the fiber optic cables and the optical fibers, where the fiber optic cables lie in a first plane and occupy an input zone, the fibers lie in a second plane substantially parallel to the first plane and occupy an output zone, the cables and fibers both occupy a transition zone in which the fibers are non-parallel, and the optical fibers in the output zone lie parallel to one another and have a first pitch; and a ferrule (3) attached to the ribbonized assembly, the ferrule having a plurality of

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internal grooves (9) having a second pitch, wherein the first pitch of the optical fibers is substantially equal to the second pitch of the ferrule.

The Examiner's rejection is respectfully traversed. Under 35 U.S.C. §102, the cited reference must show each and every feature of the claimed invention. Extension of or speculation as to the cited teaching is permitted only when *necessarily present* in the disclosed apparatus or method. In other words, if a particular feature is not specifically disclosed it can only be relied upon under 35 U.S.C. §102 if and only if such feature is necessarily present in the disclosed apparatus or method. Applicants respectfully submit that Suematsu et al. fails to disclose all of the elements of the present invention. In particular, Suematsu et al. fails to disclose both the claimed "ribbonized assembly" and "ferrule attached to the ribbonized assembly."

Suematsu et al. discloses an optical connector ferrule. Referring to col. 3, lines 20-53 and FIGS. 1A-2, the optical connector ferrule is formed by fitting a cylindrical metal sleeve (2) onto a cylindrical molded plastic member (1). At the longitudinal ends of the member (1), there are formed flanges (3) protruding outwardly in the radial direction. The metal sleeve (2) is fitted onto molded plastic member (1) between flanges (3). At the center of molded plastic member (1), there is a fiber insertion hole (4) extending from one end surface 5 to ferrule end face 6. Fiber insertion hole (4) is composed of an introductory hole (7), an intermediate hole (8), and minute holes (9). The introductory hole (7) has a sectional area which allows insertion of the coated portions (11) of optical fibers (10). The intermediate hole (8) has a sectional area which does not allow insertion of the coated portions (11) of the optical fibers (10), but which allows insertion of bare fibers (12) exposed in front of the coated portions (11). Each of the minute holes (9) has a sectional area which allows individual insertion of each of the forward end portions of the bare fibers (12) inserted into the intermediate hole (8).

Referring to Fig. 2 of Suematsu et al., the Office Action characterizes cylindrical metal sleeve (2) as the "ribbonized assembly" set forth in claim 1, and further characterizes as a "ferrule" that portion of the device of Suematsu et al. having minute holes (9). Although the Office Actions specifically identifies flanges (3) as the "ferrule," the further identification of holes (9) as being part of the "ferrule" leads Applicants to understand molded plastic member (1)

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is characterized as a ferrule, as it is member (1) that defines both flanges (3) and holes (9). Accordingly, the portion of the device characterized as the “ferrule” (i.e., molded plastic member (1)) cannot also be characterized or considered as part of the “ribbonized assembly” of the claimed invention.

In Suematsu et al., the cables and fibers are positioned and aligned by insertion hole (4), and particularly by introductory hole (7), intermediate hole (8), and minute holes (9). However, insertion hole (4) is defined by molded plastic member (1). As discussed above, member (1) has been characterized as the claimed “ferrule,” and therefore cannot also be considered as part of the claimed “ribbonized assembly” in the present application. Conversely, if member (1) is characterized as part of the “ribbonized assembly”, the member (1) cannot be considered as part of the claimed “ferrule” in the present application. That is, for Suematsu et al to anticipate all of the elements of claim 1, member (1) must be characterized as part of the claimed ribbonized assembly, and also as part of the claimed ferrule. Clearly, member (1) cannot be properly characterized as both claimed elements. Accordingly, Suematsu et al. fails to disclose both the claimed “ribbonized assembly” and “ferrule attached to the ribbonized assembly.” For at least this reason, Applicants submit that Suematsu et al. cannot support a rejection of the claimed invention under 35 U.S.C. 102(a), and respectfully request that the rejection be withdrawn.

Claims 2-4 and 7-15 each depend, either directly or indirectly, from independent claim 1, which allowable for at least the reasons set forth above. Accordingly, claims 2-4 and 7-15 are also allowable at least by reason of their dependency from an allowable claim.

Dependent claim 2 has been amended to remove the phrase “or nearly touching”, so that claim 2 now specifies that the optical fibers in the ribbonized assembly are touching one another. Suematsu et al. clearly teaches that minute holes (9) separate fibers (12). See, for example, FIG. 1B of Suematsu et al. showing a dividing wall (not numbered) between holes (9), and FIG. 3C showing distinct and separate holes (9). Accordingly, amended claim 2 is not anticipated by Suematsu et al. for at least this additional reason.

Dependent claim 8 has been amended to correct a typographical error by changing the dependency of claim 8 from claim 1 to claim 7. Claim 8 refers to non-active fibers, which are given proper antecedent basis in claim 7.

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Regarding dependent claims 7-10, the Office Action alleges that Suematsu et al. includes the claimed “non-active fibers.” However, the Office Action does not specifically identify the alleged non-active fibers. Applicants respectfully submit that Suematsu et al. makes no teaching or suggestion whatsoever regarding the inclusion of non-active fibers in the ribbonized assembly. Specifically, Suematsu et al. does not teach or suggest “the ribbonized assembly further comprises non-active fibers disposed adjacent to the optical fibers” (claim 7); “the non-active fibers are of the same construction as the optical fibers” claim 8); “the non-active fibers are disposed between the optical fibers” (claim 9); or “the optical fibers are disposed between the non-active fibers” (claim 10). Because Suematsu et al. makes no teaching or suggestion whatsoever regarding the inclusion of non-active fibers in the ribbonized assembly, and non-active fibers are certainly not *necessarily present*, claims 7-10 are not anticipated by Suematsu et al. for at least this additional reason.

**Claim Rejections under 35 U.S.C. § 103**

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Suematsu et al. The Office Action alleges that Suematsu et al. discloses the invention of claim 6, except for the ribbonized assembly comprising an ultraviolet light curable resin. The Office Action alleges it would have been obvious to one of ordinary skill in the art at the time of the invention to provide Suematsu et al. to have the ribbonized assembly comprising an ultraviolet light curable resin, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice.

As described above, Suematsu fails to disclose the invention of claim 1, from which claim 6 depends. Accordingly, claim 6 is allowable at least by reason of its dependency from an allowable claim, and withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

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**CONCLUSION**

In view of the above, Applicant respectfully submits that pending claims 1-4 and 6-15 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1-4 and 6-15 is respectfully requested.

Any inquiry regarding this Amendment and Response should be directed to either Matthew B. McNutt at Telephone No. (612) 767-2510, Facsimile No. (612) 573-2005 or Gregg Rosenblatt at Telephone No. (512) 984-7443, Facsimile (512) 984-2020. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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**CERTIFICATE UNDER 37 C.F.R. 1.8:** The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 4<sup>th</sup> day of April, 2006.

By   
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